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The UI System as an Automatic Stabiliser: Focus Model Simulations

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Purpose

The purpose of this brief is to report on the empirical findings relating to the role of unemployment insurance (UI) as an automatic stabiliser in the Canadian economy and how this role might have changed over time. More specifically, the study is focused on the following:

* an evaluation of the role played by the UI system as an automatic stabiliser in the two recent recessions, namely, 1981-82 and 1990-91;

* the effects of changes made to the UI system over the last 15 years on the stabilisation properties of the UI program; and

* how the stabilising role of the UI program compares with other automatic stabilisers such as the progressive income tax system.

Background

This is one of two macro-economic simulation studies of unemployment insurance conducted as part of the first comprehensive evaluation of the Regular UI program in Canada. This research approach was adopted in part to test the sensitivity of results to the large models employed. Where the main findings of these two independent studies converge, there would be greater confidence in drawing conclusions.

The study reported in this briefing was carried out by the Policy and Economic Analysis Program (PEAP) of the University of Toronto, utilising the FOCUS macroeconomic model. The other study on a similar subject but with a slightly different focus, was carried out by the Wharton Economic Forecasting Agency (WEFA), based on the use of the Wharton Canada Canadian Macromodel (WCCM). The results of the latter study are reported in a separate brief.

Like the progressive income tax system, the UI program acts as a "built-in" or automatic stabiliser in the economy. During an economic recession, as unemployment increases, UI benefit payments increase but UI revenues collected from premiums decline, with the net result that more disposable income is injected into the economy. In this case, UI expenditure increases more than UI revenue. This situation is reversed in periods of economic recovery or expansion. As the employment level increases and unemployment declines, fewer people draw UI benefits while the UI revenue increases. These result in the UI program drawing income out of the economy, thereby reducing the inflationary pressures developing during the recovery/ expansion phase of the economic cycle. In both cases, the UI system tends to dampen the amplitude of the cyclical fluctuations.

The extent and specific features of this stabilisation impact of the UI program are largely empirical issues. For an analysis and quantitative evaluation of UI's stabilisation impact, it is necessary to use a general equilibrium macroeconometric model to take account of all interrelationships and interactions in the economy. This study is based on the use of the Forecasting and User Simulation (FOCUS) model.
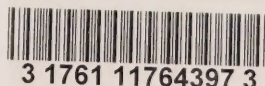
Methodology

The methodology adopted to conduct this analysis was to use the model to simulate what might have been the economy's performance if the UI revenue and UI expenditure were frozen in real terms, i.e. held constant at levels in a pre-determined base year. This "simulated" performance is then compared with the actual performance of the economy to determine whether and by how much the UI program has acted to reduce income in economic peaks and to increase income in recessions.

This methodology involves the following steps: (i) estimating the trend growth of output, i.e. the output level that the economy would have achieved without the cyclical fluctuations; (ii) comparing the trend output level with the actual output level , i.e. the output level under the normal UI program in operation, to estimate the difference or "output gap" between the trend and actual output levels with UI; and (iii) estimating the output level that would have prevailed if the UI system had not been in operation, and the difference between the trend and this simulated output level as a measure of the output gap without UI. The stabilising effect of the UI program is interpreted as the measured difference between the output gaps with and without the UI program.

By way of illustrating the methodology, let us suppose that during a recession, the trend GDP would have grown at 4 percent but the GDP actually declined by 3.2 percent with the UI program in operation. This means that the actual shortfall in output with the UI program was 7.2 percent. Suppose that it is estimated that without UI, the GDP would have fallen by 8.0 percent, i.e. by an additional 0.8 percent. In this hypothetical case, the UI system prevented or saved 10 percent (0.8/8.0) of the potential output loss or reduced the GDP gap by 10 percent.

Since the stabilising impacts of the UI program would vary over time due to lagged effects, these impacts are usually measured at the point of maximum GDP gap (loss in the case of a recession

and gain in a period of boom). The UI system, on the other hand, could be de-stabilising if in a recessionary phase, it increases the output loss instead of reducing it, or increases the output gain in an economic expansion.

Key findings

The Canadian UI system has generally played a role as an automatic stabiliser, but changes made to the program parameters from time to time have altered this impact somewhat.

There is indeed a strong correlation between the net UI spending and the performance of the economy. This is especially true with respect to UI benefit payments but much less so with respect to UI premiums. The analysis suggests that the UI premium rate (which is, arguably, not automatic but changed by policy choice) appears to have moved pro-cyclically — that is, this "tax rate" has been raised in downturns and reduced in upturns.

The stabilising impact of the UI system has varied over the last 15 years, reflecting the changes in the size of the UI program relative to that of the economy.

An average estimate of the stabilising effect of the UI program is about 10-12 percent. This means that the UI program has prevented about 10-12 percent of the total output gap at the point of the maximum output loss. In employment terms, this translates into 11-14 percent of jobs losses being averted.

The UI system acts as a stabiliser with rather long time lags. The dampening effect is small in the first year and takes more than three years to have the maximum impact on income and employment.

The 1977-78 UI reforms somewhat reduced the stabilising power of the UI system.

The UI program acted as an important stabiliser in the 1981-82 recession. It reduced the GDP gap by 12.7 percent in 1982 and for 1983, the amount of lost GDP "saved" was 14 percent. Virtually the entire stabilising effect of the UI system in 1982 and 1983 comes from the benefit payments side — there is no stabilising effect from the premium side.

The UI system also acted as a stabiliser in the 1990-91 recession and the results were quite similar to the findings for the 1981-82 recession.

The data thus far suggests that the 1990-91 reforms to UI should have no significant impact on the effect of UI as a stabiliser.

By way of comparison, the stabilising impact of the American UI program has been reported to be smaller in a similar U.S. study. It has been estimated that the UI program in the U.S. prevented up to a maximum of 3 to 5 per cent of the income gap or an equivalent of a similar per cent reduction in job loss. This finding is consistent with the fact that the American UI system provides less coverage of the work force and is less generous than its Canadian counterpart.

This study also examined how the UI system compares with other automatic stabilisers. To investigate this question, the 1982 recession and its aftermath was simulated by freezing several other fiscal instruments at their pre-recession levels, i.e., following the same method that was used to isolate the stabilising impact of the UI system. The simulations show that the federal personal income tax system had effectively no stabilising effect and that the sum of all federal non-UI transfers to persons had a stabilising effect significantly below that of the UI system.

The companion study of UI's stabilising effects using the Wharton model simulations yielded quantitatively different estimates for the Canadian economy. These largely reflect the differences in structure of the WEFA model and the FOCUS model as well as some difference in the reference periods considered. But the main conclusions flowing from the two studies are very similar.

Main policy messages

These results suggest that the policy focus should be on the revenue side if the objective is to enhance the stabilisation properties of the UI program. Changes made in the contribution rates to finance the program appeared to have reduced the program's potential for economic stabilisation. Raising premium rates more slowly in a recovery or gradually reducing them in an expansion would augment the stabilising properties of the UI program. However, this would raise the costs of the federal government if it had to provide significant interim financing for the program's increased deficits.

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Biographical notes

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